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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,230	06/10/2002	Manfred Dilger	225MU/50870	9509

23911 7590 09/23/2003

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EXAMINER

PATEL, VISHAL A

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,230

Applicant(s)

DILGER ET AL.

Examiner

Vishal Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-15, 20-23, 25-28, 30-32, 35-38 and 42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-15, 20-23, 25-28, 30-32, 35-38 and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8-15, 20-28, 30-32, 35-38 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gail et al (US. 5,752,805) in view of Aksit (US. 6,406,027).

Gail disclose brush sealing ring used in a sealing element between components which can move relative to one another, in particular between a rotor and a stator as an element which is fixed to the stator, having an annular housing (housing having 5 and 4, fig. 1) and having a multiplicity of bristle (bristles in bundle B) which are attached within the housing and protrude radially or axially out of the contour of the housing (the bristles project radially or axially out of the contour of the housing) and whose free end faces form tangents with an imaginary, rotationally symmetrical or planar face, and

the bristles being composed of sections of strands (strands of B) which are present in a wound arrangement, each section running in a loop shape (loop shape of B) around a core (7) extending away from it without crossing over in such a way that its toe end faces from tangents with the same imaginary face which is spaced apart from the core;

the sections being arranged around the core in a plurality of layers one on top of the other and being secured in a fixed fashion with a clamping section (clamp 8);

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the clamping section is prestressed by elastic cross-sectional widening (column 5, lines 61-64, where the clamping is done by clamping section 8); and

the sections of the strands are secured between the core and the clamping section exclusively by means of frictional locking which is dependent on an amount the clamping section is prestressed (column 5, lines 61-64);

the core is shaped from a metal wire (wire 7 of round cross section) with a round cross section and the clamping section is shaped a metallic round tube (column 5, lines 61-64) which is slotted in the longitudinal direction (figure 1);

in addition to their essentially, radial or axial orientation, the sections have a directional component in the circumferential directions outside the claiming region (see figure 1);

the sections have end faces (bristles of B have end faces) which are manufactured by mechanical cutting or shearing off, by laser beam cutting, if appropriate with water cooling or by means of water jet cutting (proves limitations are given little patentable weight in an apparatus claims);

the sealing ring is configured for sealing predominantly gaseous fluids, including hydrogen, turbo machines and electrical generators (intended use);

A method of making a sealing ring for sealing a space between a rotor and a stator (rotor 2 and stator 1), comprising:

fixing an annular seal housing (housing having 4 and 5) to the stator (fig. 1);

placing a core (7) in the annular seal housing with a plurality of fiber strand sections (bristles of bundle B) looped around the core (bristles looped around 7) which extend with end

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faces forming tangents with an annular face spaced from the core to the sealing engage the rotor, and

prestressing a clamp by elastic cross-sectional widening;

clamping (clamping by 8) the strand sections to the core;

the strand sections are secured between the clamp and the core exclusively by frictional clamping (column 5, lines 61-64);

the strand sections are secured between the clamp and the core exclusively by fictional clamping which is dependent on an amount the clamp is prestressed (the prestressed put on the clamp).

Gail disclose the invention substantially as claimed above but fail to disclose the bristle being made of aramid fibers wound in to a bristle and the fibers are fine, angel hair aramid fibers. Aksit disclose a brush seal having bristles made of filaments of an aramid filament yarn (Kevlar, column 2, lines 35-37). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the bristles of Gail to be made form aramid filaments into a bristle as taught by Aksit, to provide bristles that have high strength (column 2, lines 28-40).

Response to Arguments

3. Applicant's arguments with respect to claims 8-15, 20-28, 30-32, 35-38 and 42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Werner and Gail et al (US. 6,352,263).

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5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is (703) 308-8495. The examiner can normally be reached on Monday through Friday from 7:30 PM to 4:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (703) 309-3179.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168. Technology Center 3600 Customer Service is available at 703-308-1113. General Customer Service numbers are at 800-786-9199 or 703-308-9000. Fax Customer Service is available at 703-872-9325.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to: 703-872-9326, for formal communications for entry before Final action: or,
703-872-9327, for formal communications for entry after Final action.

For informal or draft communications, please label "**PROPOSED**" or "**DRAFT**" and fax to: 703-746-3814.

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Hand-delivered responses should be brought to Crystal Park Five, 2451 Crystal Drive, Arlington, Virginia, Seventh Floor (Receptionist suite adjacent to the elevator lobby).

VP

September 16, 2003

A handwritten signature in black ink, appearing to read 'Anthony Knight', is written over the printed name.

Anthony Knight
Supervisory Patent Examiner
Tech. Center 3600